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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/515,674	02/29/2000	Sreenivas Gollapudi	242/199	9849

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EXAMINER
NARAYANASWAMY, SINDYA

ART UNIT	PAPER NUMBER
2154	4

DATE MAILED: 12/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/515,674	GOLLAPUDI ET AL.	
	Examiner	Art Unit	
	Sindya Narayanaswamy	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims 1-23 are presented for examination.

2. It is noted that although the present application does contain line numbers in the specification and claims, the line numbers in the claims do not correspond to the preferred format. The preferred format is to number each line of every claim, with each claim beginning with line 1. For ease of reference by both the Examiner and Applicant all future correspondence should include the recommended line numbering.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time of the invention the invention was made to a person having ordinary skill in the art at the time of the invention to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pirolli et al, US 6,098,063 in view of Wolf et al, US 6,463,508 B1.

3. As per claim 1, Pirolli et al teach the invention substantially as claimed including a process for increasing the efficiency of data transfers between a client and a server comprising:

identifying data requested by a client (col 1, lines 41-46);

identifying prefetch data, said prefetch data comprising information not immediately requested by said client (col 1, lines 50-56);

and determining the existence of data redundancy (needs list) in the prefetch data (col 2, lines 62-67; col 3, lines 1-5).

4. Pirolli et al do not teach the transmitting of a reduced set of prefetch data, said reduced set comprising a smaller memory footprint than said prefetch data. However, Wolf et al teach the transmitting of a reduced set of data (Fig. 5, 530; col 2, lines 41-47). It would have been obvious to one of ordinary skill in the art at the time of the invention at the time of the invention the invention was made to combine the teachings of Pirolli et al with the teachings of Wolf et al because the Wolf et al's methodology of transmitting reduced sets of data eliminates the sending of data repetitively. One with ordinary skill in the art at the time of the invention would have been motivated to do so because it reduces the amount of unnecessary work done by the process.

5. As per claims 11 and 23, they are the computer program product and general purpose computer system claims of claim 1, and they are rejected for the same reasons as claim 1.

6. Claims 2-10 and 12-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pirolli et al, US 6,098,063 in view of Wolf et al, US 6,463,508 B1 in further view of Hackett, US 5,819,268.

7. As per claim 2, Pirolli et al does not teach the process of determining the existence of data redundancy performed by calculating row differences between successive rows in the prefetch data. However, Hackett teaches the process determining the existence of data redundancy performed by calculating row differences between successive rows in the prefetch data (Fig. 4, 87; col 3, lines 23-25). It would be obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Pirolli et al with the teachings of Hackett because Hackett's methodology of comparing row values would reduce the memory footprint of transmitted data to the client station. One skilled in the art would have been motivated to do so because it improves the quality of the process.

8. As per claim 3, Pirolli et al does not teach the process of claim 2 in which row differences between successive rows in the prefetch data is performed by identifying identical column values for said successive rows. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to compare rows by identifying identical column values for successive rows because it is a simple means of comparison. One skilled in the art would have been motivated to do so because it allows for a piece by piece comparison of rows.

9. As per claim 4, Pirolli et al does not teach the process of claim 2 in which determining the existence of data redundancies in prefetch data is performed by consulting a bitmap corresponding to changes between a first row and a second row of a database table. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to compare rows by consulting a bitmap because it is a simple means of comparison. One skilled in the art would have been motivated to do so because it allows for a piece by piece comparison of rows.

10. As per claim 5, Pirolli et al does not teach the process in which determining the existence of data redundancy in prefetch data is performed by creating a bitmap corresponding to changes between a first row and a second row of a database table, the bitmap containing bit values for differences in column values between the first and the second rows. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to determine the existence of data redundancy in prefetch data by creating a bitmap corresponding to changes between a first row and a second row of a database table because it is a simple means of comparison. One skilled in the art would have been motivated to do so because it allows for a piece by piece comparison of rows.

11. As per claim 6, Pirolli et al does not teach the process in determining the existence of data redundancy in said prefetch data is performed by creating a bitmap corresponding to changes between a first row and a second row of a database table, the bitmap containing bit values for differences in column values between said first and said second rows. However, it

would have been obvious to one of ordinary skill in the art at the time of the invention to determine the existence of data redundancies in prefetch data by creating a bitmap corresponding to changes between a first row and a second row of a database table, said bitmap containing bit values for differences in column values between said first and said second rows because it is a simple means. One skilled in the art would have been motivated to do so because it allows for a piece by piece comparison of rows.

12. As per claim 7, Pirolli et al does not teach the process in which the first and said second rows are not consecutive rows of prefetch data. However, Hackett teaches the process in which the first and said second rows are not consecutive rows of prefetch data (col 3, lines 33-44). It would have been obvious to combine the teachings of Pirolli et al and Hackett because the Hackett's method of comparing rows allows for non-consecutive rows to be compared. One skilled in the art would have been motivated to do so because it improves the quality of the process.

13. As per claim 8, Pirolli et al does not teach the process in which the bitmap is a multidimensional bitmap. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the bitmap into a multi-dimensional map because it would provide a simpler means of row comparison. One skilled in the art would have been motivated to do so because it allows for a reduction in complexity of the process.

14. As per claim 9, Pirolli et al does not teach the step of determining the existence of data

redundancy in prefetch data by identifying multiple copies of an item of information in prefetch data; and the act of transmitting a reduced set of prefetch data comprises sending a single copy of an item that has not changed between a first row and a second row. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to transmit a reduced set of prefetch data based on the identification of multiple copies of an item because there is no necessity for multiple copies of the same item. One skilled in the art would have been motivated to do so because it reduces the memory footprint of transmitted data to the client station.

15. As per claim 10, Pirolli et al do not teach the process comprising: maintaining pointers to the client corresponding to prefetch data and pointing multiple pointers to a single copy in a client cache. However, it would have been obvious to one skilled in the art at the time of the invention to maintain pointers at the client corresponding to prefetch data and pointing multiple pointers to a single copy in a client cache because the use of multiple pointers towards a single copy in memory is an old and known concept. One skilled in the art would have been motivated to do so because the use of pointers eliminates the need of multiple copies of an identical item in the cache.

16. As per claims 12 – 20, they are the computer program product claims of claims 1-11 and they are rejected for the same reasons as claims 1-10.

17. As per claim 21, Pirolli et al teach computer program product of claim 11 in which said prefetch data comprises information in a database table (col 2, lines 54-61).

18. As per claim 22, Pirolli et al teach the computer program product where the prefetch data comprises information associated with a web page (col 1, lines 27-40).

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. "Adaptive Stream Buffers," by Norman Jouppi, US 5,958,040

b. "Predictive Cache System," by Mark Palmer, US 5,305,389

c. "Database System With Methodology For Accessing A Database From Portable Devices," by David Yuch, US 6,341,288

d. "Method and Apparatus For Data Comparisons," by Brian Oki, US 5,802,528

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sindya Narayanaswamy whose telephone number is (703) 305-8473. The examiner can normally be reached on 8 am to 5 pm, first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-5404 for regular communications and (703) 305-5404 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

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December 19, 2002

Sindya Narayanaswamy

ZARNI MAUNG
PRIMARY EXAMINER